

INDEX OF SURGICAL PROGRESS.

GENERAL SURGERY.

I. Changes in the Value and in the Manner of Draining Wounds. By HANS SCHMID (Berlin). The author believes that rubber tubes are frequently compressed by the dressing and bandages, as they are now applied to wounds after operation, and that their benefit is an illusion. On the other hand, infections of wounds after operation are represented by two types—either a ciphtheritic slough appears on both walls of the wound after union of the skin over the wound; or else a phlegmonous inflammation of the tissue obtains.

In neither of these two cases are drainage tubes of any avail, but if an abscess was formed by the secretion in the wound turning purulent it would be only by chance that such an abscess would be evacuated through the drainage tube; moreover it requires several days for such an abscess to form, and the formation of such an abscess is never a menace to the patient's life.

Drainage tubes are frequently stopped up at both ends by clots or granulations.

Moreover, they always act as foreign bodies, and may prove disastrous to an aseptic course by containing air.

Finally the presence of drainage tubes calls for an unnecessary change of dressing.

In pursuance of these views the author has treated between 600 and 900 major surgical operative cases without drainage tubes; such as resections of the hip, elbow, knee, foot and hand; amputation, extirpation of tumors of all sizes and in all regions, and has done so for a period of two years. In all cases he was contented with the results, and no case gave cause for more serious apprehension; but once in a

while retention of bloody serum occurred which occasionally (if not quickly let out) would turn purulent.

The author used carbolic acid in 2% solution for the instrument and sponges, and $\frac{1}{1000}$ sublimate solution for the hands, catgut in alcohol and silk in carbolic acid, and soaks the field of operation in $\frac{1}{1000}$ sublimate solution for 24 hours before operation.

For septic wounds he recommends free incision, with iodoformised gauze tamponing. *Berliner Klinik* heft 11, Mai 1889.

W. W. VAN ARSDALE, (New York).

II. The Treatment of Wounds with Sugar and Its Results. By Dr. JACOB DANNHEISER (Landau). This is a resumé of the results obtained in the Strassburg clinic with sugar as a dressing for wounds in major and minor operations of diverse nature. The cases were treated in the service of Prof. Luecke. The author does not claim that the sugar dressing meets all the requirements of an ideal dressing but its cheapness and its easy preparation are much in its favor. At first the sugar was mixed with other antiseptics as naphthalin and sugar, equal parts. With the exception of $\frac{1}{10}$ iodoform in tuberculous processes, sugar is used now in its pure form of finest powder. The sugar is brought directly upon the wound in the form of a sac, without the intervention of protective. The material used for this sugar sac consists of muslin from which the oil and fats have been carefully extracted and then sterilized. Sublimate or carbolic acid must not come in contact with the bandage. The sugar is spread between two pieces of muslin in a layer about $\frac{1}{2}$ cm. thick, the edges of muslin are then folded. The sac must overlap the wound to the extent of 2 cm. in all directions. This is fastened in place by muslin bandages prepared as above, reinforced by cotton. There is no gutta serena tissue used. The moisture from the wound comes in contact with the air but the wound itself is protected by the layer of sugar. Sugar does not possess the absorbent qualities of other dressings, as the Brims' absorbent wood wool. The wound acts in a very satisfactory manner with the sugar dressing provided there is no marked suppuration. The wound has a good appearance and its edges do not appear irritable. In one case of mamma carcinoma was eczema noticed on

the surrounding surface. The dressing remains upon the wound from 6 to 8 days. The dressing could remain without change upon the wound for 14 days were it not necessary to shorten or change drains. Sugar may be used in powder form dusted directly upon the wound, in cases of ulcers on the extremities or suppurating carcinomata. Sugar is not in itself antiseptic; on the contrary the greatest care must be exercised in its selection and preparation that it be free from impurities. It simply serves to protect any wound which has been previously well washed with sublimate or any other antiseptic fluid from contamination with infectious matter in the atmosphere. Once in contact with the secretion of a wound sugar generates lactic acid and this guards against any decomposition.—*Deutsch. Zeitsch. f. Chir.*, bd. 29, hft. 4.

HENRY KOPLIK (New York).

III. The Influence of Glucose in Suppuration. By Ono BUJRVID (Warsaw). Bujrvid suggested that, in patients suffering from diabetes with profuse suppuration, either the staphylococcus pyogenes aureus is developed more abundantly on glucose pabulum, or the tissues are not able to destroy the staphylococcus when glucose is present.

Experiments proved the first hypothesis to be wrong; for cultures in meat peptoned agar, with an addition of 5-100 glucose, were more slowly developed than in common agar. Then Bujrvid examined the second hypothesis experimentally, first finding the quantity of suppurative cocci that may be injected subcutaneously into an animal without causing suppuration. It was found that when the same quantity of staphylococci in a sterilized solution of glucose (25-100) is injected, there arises an abscess. The same result is reached if, after the minimal incorporation of the cocci, the tissue is irritated by an injection of a water solution of glucose. If, however, about three days are allowed to pass after the injection of the staphylococci, during which time the cocci are destroyed by the tissue, subsequent injections of 12-100 solution of glucose do not produce abscesses. On the other hand, that quantity of staphylococci which is normally borne by animals without reaction, in animals subjected to intravenous injections of glucose produces severe phlegmonous appearances with gangrene of the skin, as in cases of diabetes.—*Centralblatt f. Bakteriologie*, vol. iv, No. 19.

IV. A New Method of Treatment of Tuberculous Processes. By A. LANDERER (Munich). The author, basing his experiments upon the good results obtained with the use of Peruvian balsam after excision of the hip-joint, made trial of this agent in 70 cases of surgical tuberculosis. The remedy was applied either pure, incorporated in plaster, or, as for instance, in tubercular disease in the neighborhood of bones and joints, as well as for soaking tampons, in etherial solution. A mixture of Peruvian balsam with almond oil and mucilage of acacia was also found to be a ready means of reaching points of tuberculous foci, where the above means were found inapplicable (tuberculous cystitis, etc).

The application of Peruvian balsam was not made upon any supposed anti-bacterial or germicidal action, but only for the purpose of stimulating the formation of healthy cicatricial tissue and improving the vital resistance of the tissues to the invasion of the tuberculous process.

Intravenous injections, as well as its use subcutaneously, was resorted to by Landerer, basing its use by these means upon the fact that corpuscular elements, such as cinnabar, etc., are deposited in diseased animals, by preference in localities where inflammatory affections existed, or injuries had been sustained.

The results obtained by Landerer do not appear to be the most brilliant imaginable, inasmuch as what seems to be about the usual proportion of local recurrences and resulting fistulae occurred. Should his claim to the superiority of this material be sustained, however, it will have the happy effect of dispensing with some of the more grave operative procedures for tuberculous diseases, and substitute therefor less formidable means, such as curetting, partial resection and erosion.

In this connection attention may be called to the iodoform treatment of tuberculous abscesses, particularly those deep and gravitating abscesses following spondylitis. The well known unfavorable, almost hopeless, outlook in this class of cases, in spite of Treve's suggestion to attack the spinal column itself, with the view of removing the diseased bony structure, will lead the surgeon to hail with delight any means which may hold out the slightest hope of relief. Despite the

results of experimenters and theorists, P. Bruns, of Tübingen, still pins his faith to iodoform in this class of cases, at least. This surgeon (Bruns, *Beiträge zur Klinischen Chirurgie*, bd. iv, heft 1) punctures the psoas, lumbar and other abscesses secondary to Pott's disease, and follows this by frequent injections of an emulsion of iodoform in oil. The most brilliant successes are said to have followed this method of treatment. For instance, in a group of 12 cases of large spondylitic abscesses, 10 were cured. In another series of 35 cases, 24 were completely healed. Surely no other method of treatment heretofore devised has given such excellent results.—*Munchener Med. Wochenschrift*, 1888, Nos. 40 and 41; 1889, No. 4.

V. Clinical Study of the Etiology of Tetanus. By DR. RICCOUON. The author comes to the following conclusions: Tetanus is a true infectious disease. It is conveyed through the medium of the air and also through direct contact. Solid hooved animals are particularly liable to attacks of the disease and convey it most frequently; the next most frequently liable to the disease are man and the ruminating animals. The germs of the disease may be scattered about from those affected with the disease and be preserved for a long time in dung, earth or water. Agricultural instruments, therefore, which are kept in barns, outhouses, etc., become the common medium of infection; this seems to explain the frequency with which tetanus follows wounds of the hands and feet among the rural population in certain districts. If the germs are collected together in sufficient quantities in the earth in a given area, it may happen that the disease will become endemic. The thought suggests itself that, under certain conditions of climate, the germs of tetanus may be propagated, the earth becoming the cultivating medium.—*Gaz. Hebdom. de Med. et de Chir.*, 1888, No. 35 and 36.

GEO. R. FOWLER (Brooklyn).

VI. On the Nature of Ozæna. By DR. K. SCHUCHARDT (Stettin). This is an attempted explanation of ozæna, on the basis of a suggestion of Von Volkmann. The various theories including the bacillary are rapidly reviewed and discarded. His own rests on

two general observations: 1. The foul odor so commonly emanating from softening and decomposing epithelium beneath the foreskin, between the toes, in the navel or even the axilla, and less often from the uterine canal or the ear. 2. The transformation or metaplasia of cylindrical and ciliated epithelium into layers thin or thick of common pavement epithelium, even to cornification on the surface, a process studied by F. Neelsen (1887) on the urethra and the trachea, and by A. Zeller on the epithelial lining of the uterus. Back in 1882 Volkmann published his observations that regularly in *ozæna* the ciliated epithelium of the nasal fossa was changed to pavement epithelium. Then Zeller investigated the transformation of the uterine cylindrical epithelium, by chronic catarrh of the womb, into stratified pavement epithelium, which may cornify on the surface. By this peculiar process, and changes at the same time in the deeper layers (disappearance of glands, formation of papillæ), the mucous membrane acquires almost the character of the external skin—"it is epidermoidized." Since an excess of the epithelium is not so easily thrown off in the uterine cavity as from the external skin, decomposition sets in; consequently this form of chronic metritis is often enough attended by an extremely stinking discharge.

To make a comparative study Schnchardt took some small particles of nasal mucous membrane extracted by Volkmann in cases of *ozæna*. Microscopical sections from two cases are described and illustrated. The ciliated and cylindrical epithelium had vanished. Pavement epithelium had replaced it, cornified in one case of long duration where there was also cicatricial and granulation tissue and an absence of glands. Excepting the cartilage-walled and the olfactory regions, the nasal mucous membrane normally bears ciliated columnar epithelium. Such metaplasia has been casually noted, mostly in cases of *ozæna*, by Max Schultze (1862), H. Krause (1881), E. Fränkel (1882), and Habermann (1886). A like process naturally also affects neighboring mucous membrane, causing dry pharyngitis, etc.

He endeavors to generalize the position taken, by citing illustrations of metaplasia in other parts of the body, as a canceroid in a pulmonary

cavity, an epithelioma of the urethra, etc.—*Volkman's Samml, klin. Vortr*, 1889, No. 340.

WILLIAM BROWNING (Brooklyn).

VASCULAR.

I. On the Operative Technique of Ligating the Inferior Thyroid Artery. By PROF. RYDYGIER (Cracow). In addition to his 12 recently published cases of ligation of the afferent thyroid arteries for goitre, Rydygier has done the operation 4 times. In his last 2 cases he has attempted to remedy the objection that when the subthyroid is tied according to Drobink's method 4 striking scars remained on the neck. His modification is also presented as a simplification.

After turning the patient's head to the other side, make a 6 to 8 cm. long incision, 2 cm. above and parallel to the upper clavicular border. This crosses the posterior edge of the sterno-cleido muscle so that scarcely half lies transversely over the muscle. Divide skin platysma and superficial cervical fascia. Work with both forefingers beneath the sterno-cleido, seeking by pulling up and down to separate the loose connective tissue beneath the muscle and to gain the inner border of the scalenus anticus muscle, and even further mesially. The larger vessels and the vagus remain on the posterior surface of the sterno-cleido, being together displaced upward by the finger. With one or two very long blunt hooks in the opening thus formed draw vessels, nerve and muscle forward so that the opening shall gape well. If this has been bored far enough mesially from the scalenus the thyreo-cervical trunk can be seen pulsating on the inner border, and the subthyroid arching around mesially. These two vessels may be further substantiated by the superficial cervical artery crossing the opening, or the ascending cervical passing upward. With two sufficiently long anatomical forceps, that the view be not obscured by the hands, the vessel can be readily isolated, a double thread placed around it, and then twice tied. The vessel is then severed between the ligatures. His experience does not bear out Billroth's, that this vessel is specially fragile. Large lymphatic glands are removed when in the path. The

phrenic nerve is usually seen as it crosses from above and outward over the anterior scalenus inward, but need never be injured. Sometimes the subthyroid is partially hidden under the inner edge of the scalenus; here the muscle must be pressed flat to gain access.

The transverse incision is better obscured by the plication of the cervical skin, and is besides so low as to be usually covered by the clothing. In these two cases he has also exposed the suprathyroids by a cross incision, and thinks the scars less noticeable.—*Centbl. f. Chirg.*, 1889, No. 14.

II. Ligature of the Uterine Vessels. By A. v. GUBAROFF (Moscow). The author calls attention to a new method of ligaturing the vessels of supply of the uterus (the uterine artery, the utero-ovarian and the artery of the round ligament), at the same time preserving the vaginal anastomoses, in order to avoid necrosis of the parts.

The incision is made as for the operation for extra-peritoneal ligature of the common and internal iliac (Pirogoff). The tendinous margin of the transversalis is to be avoided, in order to facilitate separation of the peritoneum. The lower angle of the wound should reach to the internal inguinal ring. After separating the three layers of abdominal muscles and the transverse fascia, the peritoneal sac is loosened from the iliac fossa, and the point of division of the common iliac artery sought for along the inner edge of the psoas magnus muscle. By the aid of a Sim's speculum the parts are separated, the loosened peritoneal sac being retracted toward the median line, the internal iliac artery may be followed into the lesser pelvis, and the uterine artery seen arising therefrom. The point of crossing of the artery with the ureter, which now becomes visible, is the surest guide in the search for this vessel. The utero-ovarian artery, accompanied by its veins, as it passes along the peritoneal sac, is easily isolated, brought into view in the same wound and ligatured. The artery of the round ligament may be found in the lower angle of the wound, and ligated separately, or the ligament may be tied *en masse*. In order to dispense with the necessity for its rather difficult isolation, and to accomplish the result without risk, it is suggested to isolate the inferior epigastric artery and

ligature it in the same wound, at a point just before its crossing with the ligament.

It may be a question as to the field which this new operation is to occupy in the surgery of the pelvis. The author states, as the result of his own observations and studies upon the subject, that, in his judgment, the following conditions may be mentioned in which it is undoubtedly indicated.

1. Inoperable carcinoma of the uterus, accompanied by free hæmorrhages.
2. Intra-ligamentous tumors and sub-serous myoma; the ligature may be done preliminarily to a hysterectomy.
3. Persistent uterine hæmorrhage, the especial origin of which cannot be determined, and in which other measures prove futile.

Gubaroff has himself performed the operation only upon the cadaver, but Prof. Sneguireff has applied it to a single case, the nature of which is not stated, and a favorable result is claimed. The artery of the round ligament was not tied in this case.—*Centralblatt f. Chirurgie*, No. 22, 1889.

GEORGE R. FOWLER (Brooklyn).

GENITO-URINARY ORGANS.

I. Suprapubic Lithotomy in Children. By DR. LEONTY P. ALEXANDROFF (Moscow). Dr. Alexandroff, house surgeon to St. Olga's hospital for children, has used high lithotomy in 26 out of 36 children (aged from 22 months to 10 years, mostly from 2½ to 7), admitted for lithiasis during the last two years. Every one and all recovered. In the first two cases, the vesical wound was left open, and a drainage tube was introduced into the bladder; the wound healed completely on the 47th and 21st days respectively. In the remaining 24, the vesical wound (measuring 2 or 2½ cm.) was closed with sutures (about 5 in number), and a catheter *a demeure* was inserted into the viscus. In the first 16 of the 24, a drainage tube was introduced simultaneously into the antevsical space (for 5 or 6 days) and the remaining portion of the abdominal wound closed with silk. In 15 of the 16, the outer wound healed *per primam*, recovery taking place on an average, in 18.3

days; in 1, the wound gave way to heal with a stellated sear on the 36th day. In the last 8 (of the 24 vesical suture cases), the whole abdominal wound was closed with a three-*etage* (muscles, aponeurosis, skin) suture. In all the incision healed *per primam* in from 7 to 10 days. The stone measured from 1 to 4.75 cm. in its longest diameter. The temperature rose to 39° C. during a few first days after the operation in 3 cases, to 38° C. in 6, in the remaining the after-course being wholly apyretic. A slight admixture of blood in the urine during the first 3 or 4 days was noticed in 3 patients only. In all the cases, strict antiseptic precautions were adopted.

Dr. Alexandroff's general conclusion may be given as follows: (1) High section represents the best cutting operation for vesical stone in children. (2) The vesical wound should always be totally closed with interrupted sutures. (3) The best material for the latter is ordinary silk, which is better disinfected, and allows a better insertion of the suture, than catgut. (4) The antevésical drainage is not only quite superfluous, but even injurious, since it retards the healing powers and gives life to the formation of (temporary) fistulæ. (5) The catheter *a demeure* may be safely removed by the end of the first 3 days, and sometimes even in 24 hours after the operation. (6) An alkaline urine does not contraindicate closing the vesical incision with sutures. (Dr. Alexandroff's series is not included in Dr. N. V. Solomka's collection of Russian high lithotomies.) *Vratch*, No. 18, 1889, p. 409; also *St. Olga's Hospital for Children Reports*, 1887. *ANNALS OF SURGERY*, vol. x. p. 125, Sept. 1889. Ed.

II. Two Cases of Suprapubic Lithotomy. By DR. J. J. MAKKAVEREFF (St. Petersburg). The author describes his 12th and 13th cases of high section (his first 10 cases operated upon during the preantiseptic period, were published in the *Meditsinsky Vestnik*, Nos. 23-33, 1889). They referred to the patients, aged from 2 to 17, of whom 2 died on the 11th and 35th day respectively, while the others recovered in from 30 to 97 days. The 11th case an antiseptic one was reported in the *Vratch*, No. 13, 1884. The patient, æt. 22 years, recovered in 45 days. All the 13 are included in Dr. Solomka's collection. Ed.

A well-nourished man of 35, with symptoms' of about 12 months standing, and with highly turbid and faintly acid urine. The operation was conducted under all antiseptic precautions, the bladder being filled with a boracic solution. The stone weighed 2.17 grammes, measured 2x1.5x1 cm., and consisted of urates. The vesical incision was totally closed with silk *etage* sutures, the ante-vesical space drained, the rest of the abdominal wound sewed with silk, the bladder supplied with Nelaton's catheter, and the wound thoroughly treated with iodoform and covered with an antiseptic dressing. The after-course was absolutely apyretic and generally left nothing to be desired. Both of the incisions healed *per primam*, recovery being complete about the 25th day.

II. A fairly well-nourished boy *et.* 5 years, with symptoms of 2½ years' duration, and faintly acid urine containing floccs. The bladder was filled with a tepid 3% boracic acid solution. The (urate) stone weighed 9 grammes and measured 8x2, 5x2 cm. The vesical wound was left open, (no Nelaton's catheter being at hand) and furnished drainage; the abdominal wound was sutured down to the site of the tube and treated with compresses soaked in a corrosive sublimate solution; the bladder daily washed out with the same fluid. For the first 5 days the boy suffered from fever (39° C. in the evening) and was generally uncomfortable. From the 11th day the urine commenced to flow through the urethra. The abdominal incision united *per primam*, except the lower angle, recovery ensuing about the 21st day,

In common with Drs. Solomka, Jakovleff and Alexandroff, Dr. Makka-veeff emphatically advocates closing the vesical wound with sutures, since the procedure reduces the risk from the operation to a minimum and at the same time secure a comfortable after-course both for the patient and surgeon, while in such cases where the incision is left open, there is always present a serious danger of its getting infected, the patient's state is painfully uncomfortable and the surgeon's task very troublesome and labourous. Generally, the high operation with vesical suture deserves the most careful consideration of surgeons. The best plan is thought to consist in sewing the vesical incision with silk *etage* interrupted sutures, and introducing into the bladder a catheter *a demeure*

for a possibly prolonged period. In his 11th case (*vide supra*) where the wound was closed with catgut and the catheter removed on the 8th day, the incision gave way on the 10th day, the urine oozing into the dressing for the next few days.—*Pratch*, Nos. 7 and 8, 1889.

IX. Case of Suprapubic Lithotomy for an Enormous Vesical Stone. By DR. POMPEI I. MULTANOVSKY (St. Petersburg). A highly emaciated man, æt. 33 years, father of 5 children, applied to the author, in 1875, on account of vesical disease, of 21 years standing, with complaints of agonizing, painful and excessively frequent vesical tenesmus, the urine escaping drop by drop and representing a fetid puriform matter. A catheter struck a stone-hard immovable mass just within the outlet of the viscus, but could not be pushed further in any direction. An enormous stone having been diagnosed, high cystotomy was resorted to as the only applicable operative procedure. The bladder, when exposed, was found to be completely filled up with a single concrement which could be extracted only through a cruciform incision measuring vertically 9 cm. and horizontally 6. The cavity of the organ "had a truly terrifying appearance; it was simply an intolerably offensive, continuous ulcer with a few islet-like remnants of the mucous membrane scattered here and there over the surface." A double drainage tube was introduced into the cavity, and the upper half of the abdominal wound closed with wire, while the lower one was plugged up with carbolized gauze. The after-treatment consisted mainly in washing out the bladder, every 3 or 4 hours, with a 1% carbolic solution, and the internal administration of flores benzoes, 2 grains every 6 hours. Convalescence went on most satisfactorily. From the 35th day, all urine commenced to pass through the natural channels. When seen 2 months after the operation the man was well and sound, his micturition absolutely normal. The site of the operation was occupied by a whitish scar which could be easily moved about together with the skin. He remained quite well for about 12 years, when there rapidly developed a formidable abscess in the right renal region, the patient dying from uræmia about a month later. No necropsy was permitted. The stone removed represented an

equally smooth and almost regular ellipsoid, 18 ounces and 2 drachms (545 grammes) in weight. It measured $9.7 \times 8.1 \times 6.7$ cm, its largest circumference amounting to 29 cm. It was composed of phosphate of lime. Dr. Multanovsky draws attention to the following points of interest. (1) As regards the size and weight of the stone, the case is one of the rarest on record. International literature contains not more than 7 cases referring to stones of larger dimensions. The cases were published by Cheselden (18½ ounces); T. Fattor (20); A. Vi tellius (22); Deguises (31); T. B. Verduc (3 pounds and 3 ounces); Earle (44 ounces); Preston (51). (2) The stone had been growing on during 27 years, without much troubling the patient for the first 24. (3) The case beautifully illustrates that fact that it is never too late to remove a vesical stone and *eo ipso* to mend the patient's state in all regards. (4) The brilliantly successful issue of the case should be attributed to the internal use of flores benzoës, which rapidly transformed an alkaline urine into an acid one, and *eo ipso* prevented such complications as gangrene of the perivesical cellular tissue, deposition of urinary salts on the wounded surfaces, etc. By the way, with similarly successful results and for similar purposes the author frequently administers internally salicylate of sodium, in the daily dose of from 30 to 40 grains, provided the patient's heart is sound. (5) No bad consequences whatever resulted from an extensive division of the sphincter vesicæ and the detrusor urinæ, hence, a large crucial incision into the bladder may be safely recommended as a means for alleviating the extraction in all cases of unusually large vesical stones.—*Pratch*, No. 49, 1888.

IV. Etage Suture in Allarton-Dolbeau's Median Section.

By DR. NICOLAI V. SOLONIKA (Tiflis, Russia). The author proposes closing the perineal wound with an *étage* suture in this way: The urethra with catgut, the deep and superficial perineal layers with silk, each separately. A catheter *a demeure* should be introduced. The method secures healing *per primam* and is indicated in such cases where (a) the urine is not altered very markedly; (b) where the stone has been removed without inflicting any traumatic injury; and (c) where

the bladder does not contain any fragment.—*Third General Meeting of Russian Medical Men at St. Petersburg, No. 10, 1889.*

VALERIUS IDELSON (Berne).

ULCERS, ABSCESSSES, TUMORS.

I. The Treatment of the So-Called Perityphlitic Abscess. By ROBERT F. WEIR, M.D. (New York). The author has made a careful study into the literature of the subject and has coupled this with an extensive personal experience in the treatment of this affection. After a complete review of all these points he submits the following conclusions based on observations of 100 post-mortem examinations and from 32 personal operations, for so-called perityphlitic abscesses.

1. That all such abscesses originate in the peritoneal cavity, and there develop to an appreciable size before invading extra-peritoneal tissues or viscera.

2. That as stercoral accumulations or cœcal perforations are so rarely met with as causes of perityphlitic tumor or abscess, they should not be considered from a clinical view in any given case.

3. That in an attack of perityphlitis originating, as it generally does, as a perforation, or as a gangrenous condition of the appendix vermiformis, all use of purgatives or enemata is, in the beginning of a case, to be avoided, and the immobilization of the patient is to be insisted on, and aided, if necessary, by anodynes.

4. That if a tumor be found, it be opened by a lateral incision as soon as symptoms, constitutional or local, indicate the formation of pus.

5. That if symptoms indicating an increase of the local peritonitis, such as the persistence of vomiting, spreading pain, abdominal resistance and temperature elevation, continue with or without the formation of tumor, for a period of 48 hours, the danger of the disease is greater than the proposed lateral or median laparotomy, which should then be immediately resorted to. In many instances even a less time should be afforded the consideration of the disease before operating.

6. If a general peritonitis be suspected, corroboration can often be

obtained by abdominal aspiration with a fine needle employed in places other than in the right iliac fossa, and particularly by a deep, hypogastric puncture into the pelvis, the bladder being first emptied. However, if left in doubt, it is better to operate.

7. [*Sub judice*.] That if general suppurative peritonitis be found at a laparotomy, lateral or median, avoid too much handling of the intestines, and trust to either temporary irrigation with large glass tubes (Tait's), or, more rationally, to permanent or repeated irrigation and fluid distention of the abdominal cavity, as advocated by Greig Smith and by Penrose.

8. [*Sub judice*.] To meet the obstruction symptoms due to septic paralysis of the bowels, which often persist after a laparotomy for suppurative peritonitis, saline purgatives and repeated washing out of the stomach should be resorted to, even though vomiting be present to a marked degree. Enterotomy may also, in exceptional cases, be entertained.—*Medical News*, April 27, 1889.

II. Treatment of Suppurative Psoitis by Trephining the Pelvis. By MICHEL GANGOLPRE (Lyon). The author considers that: (1) Infections or even traumatic psoitis is of exceptional gravity, whether it be on account of the general condition of the subject or the possible invasion of the hip-joint. (2) Early incision is the best method of preventing a fatal issue. (3) Trephining the pelvis is easy, rapid, without danger and permits the establishment of perfect drainage of the iliac cavity. (4) The classical incisions, lumbar, inguina-crural or even posterior crural, can be combined with it as the case may demand, if the extension of the trouble into those regions be ascertained.—*Revue de Chirurgie*, March, 1889.

JAMES E. PILCHER (U. S. Army).

III. On the Causes of the Local Relapses of Cancer after Amputation of the Breast. By TROTHAR HEIDENHAIN (Berlin). The author was lead to his investigations by the conviction that it must be possible on the specimen removed by operation to determine whether and where portions of the neoplasm had been left in the wound. He hoped that rules for rational operative treatment

could be drawn if it were possible to show where in the wound cancerous remains had been left. The investigations were limited for several reasons to the reverse side of amputated mammae. After hardening the breast in toto, division into discs perpendicular from the reverse or cut surface to the skin, and imbedding in colloidin, the examination was made on microtom-sections made in the same direction; 18 entire breasts and 4 cancers of the pectoralis major were examined. It appeared that in 12 of the 18 patients a local relapse was to be expected since it was proven that portions of the gland or the neoplasm had been left by the operation on the surface of the pectoral muscle. One of these 12 disappeared; of the 11 remaining, 8=72%, have already suffered or died from a relapse, whilst 3 are still well. Six of the patients ought to have remained free from a local recurrence since it was shown that none of the neoplasm had been left; 2 of these are excluded because only operated in January, 1889; the remaining 4, operated between February 23 and August 3, 1888, are as yet well. The causes of the prophesied and also realized relapses were as follows:

1. The pectoral fascia is extremely thin and its limits especially in very stout women are very indefinite, so that even by preparation it is not possible to free it from the muscle without leaving remnants of connective tissue thereon, unless the division is made directly through the muscle.

2. In spare women the mamma in toto, and in stout women at least some lobules here and there lie firmly on the fascia and hence the muscle, so that in amputating above this particles of the gland are very easily left.

3. Every mamma in which a cancerous nodule exists is very extensively diseased, perhaps in toto; the epithelial cells of the acini proliferate with coexistent periacinous increase of the connective tissue. The cancerous nodule is where the degeneration has progressed farthest. Perhaps some of the late recurrences proceed from proliferating acini left in the wound.

4. In the retromammary fat, usually beside bloodvessels, run lymphatics from the gland to the pectoral fascia. In two-thirds of the cases of mammary cancer, numerous cancerous metastases are found

in these lymphatics. The epithelial proliferation quickly pushes along these preformed passages even through thick layers of fat to the fascia, so that a carcinoma freely movable on the muscle reaches as a rule microscopically to the muscle-surface.

5. The pectoralis major is as a rule healthy as long as the cancer is freely movable upon it. It first becomes affected when a metastatic nodule growing independently in the fascia breaks into it, or when the main tumor by continual growing attacks it. Probably the cancer also spreads in the muscle by the lymphatics, starting from these and pushing in between the fibres.

6. Probably from contractions of the muscle and by movements epithelial cells are carried along with the lymph-current.

In consequence of the thinness and uncertain limits of the fascia there always remain, when we attempt to separate this from the muscle according to present methods, remnants of connective tissue on the muscle's surface, even though only microscopic, and with these as a rule particles of the gland lobules or local cancerous metastases in the retromammary lymphatics or both. In 12 of the 18 breasts examined, this was the cause of the prophesied and in great part already occurring relapses. These recurrences are to be avoided by taking away at the operation a continuous layer of the entire muscle-surface. Particularly the blood-vessels traversing the muscle must be severed not above it as now but in it, for they are mostly accompanied into the fascia by cancerous lymphatics. In this way we are sure to operate in healthy tissue, so long as the carcinoma is freely movable over the muscle; the latter does not become involved until very late.

In one case relapse was to be expected from metastases left on the muscle's surface as well as from those remaining in the muscle, and in fact this took place. The microscopically healthy muscle was here found extensively invaded by numerous microscopically small cancer-nodules that had evidently spread in the muscle by way of the lymphatics. From the materially promoting influence of the muscular motions and contractions on the lymph-current therein, it was to be presumed that thus the wide scattering of the epithelial cells had been produced or favored. Four other examinations of cancerous muscles

strengthened this view, although conclusive proof of it cannot be furnished. If the hypothesis of the transportation of epithelial cells along the lymphatics of the muscle by movements proves correct, then cancer of the muscle must be extremely malignant. Hence Heidenhain collected from the statistics of v. Volkmann, Kiister and Helferich their operated cases of mammary cancer where this was attached to the muscle. The results were noticeably bad; from a total of 65 patients only 2=3% were permanently cured (length of observation 6 years, v. Volkmann), 7 others were not followed up conclusively, 56 died from recurrence. From this the author considers it justifiable to declare a muscle attacked by cancer to be suspicious in toto. He proposes in every case in which the cancer is firmly adherent to the muscle, or even where it is only so firmly attached to the fascia that it may have penetrated the muscle, to perform a typical total extirpation of the major pectoral muscle. In that way the entire infected lymphatic-tract would be removed, and thus we may believe that relapses from this side would be as a rule impossible. Not a fibre of the muscle should be left however; probably it will be advisable to remove the clavicular and sternal attachments of the muscle with the periosteum, the relatively frequent recurrences on the sternum furnish an urgent warrant for this. By the removal of the pectoral the fossa of Mohrenheim with its glands will at the same time be thoroughly exposed for emptying. The operation is not more bloody than otherwise. After the cure functional disturbance is scarcely noticeable.

Finally he calls attention to the fact that heretofore the microscopical examination like the operative therapy of carcinoma has been almost entirely directed to the gross primary tumor and the secondary affection of the lymphatic glands. Of the extension of cancer in its own neighborhood nothing at all was known. Nevertheless it is beyond cavil that the path and the way in which the cancer spreads are quite different according to the kind of cancer, its anatomical structure and the function of the diseased organ or tissue. Perhaps it is possible by microscopical-topographical study to determine the paths by which cancer spreads in the various organs, and from the course of the infected lymphatics to determine beyond what limits the operation

must extend to avoid recurrences. A second question of great importance is how the modus of cancer-spreading changes, when it steps over from a primarily diseased organ or tissue to neighboring ones of other structure or function. Heidenhain hopes that the operative therapeutics may gain some help from systematic investigations in both directions.—*xviii Germ. Surg. Congr., Author's report in Centbl. f. Chirg.*, 1889, No. 29.

WILLIAM BROWNING (Brooklyn).

IV. The Early Diagnosis of Morbid Growths. By J. COLLINS WARREN, M.D. (Boston).—The author remarks that the attempt to make a microscopical examination of morbid growths before their removal dates back to the earliest period of microscopical histology. The pain and danger of inflammation attending the methods adopted led to their abandonment. Antiseptic surgery, however, now enables us to perform such an operation almost with absolute certainty of absence of inflammation. Local anæsthesia with ether spray or cocaine renders the exploration free from pain. The instrument which the author employs consists of a small cannula, sharpened at the end. The calibre of the instrument varies from two to five millimetres. The instrument is used by gently rotating the cannula between the fingers. After the instrument has penetrated the tumor to the desired depth, it is withdrawn a short distance, and then entered obliquely, so as to cut off the column of tissue. The piece removed may be as large as five millimetres in diameter and three centimetres in length, or even longer. The fragment can be at once examined by means of a freezing microtome or placed in alcohol and hardened. The operation can readily be performed at the physician's office and immediate diagnosis made. Several cases were reported, illustrating the information obtained by the use of the cannula. The instrument has been used in over one hundred cases, with little or no discomfort to the patient and with satisfactory results. It has been used in abdominal tumors. It has been used in one or two growths involving the abdominal parietes and peritoneum, but not in deep-seated organs. The object of the author in bringing the results of his observations before the Association was to show that modern improvements have

made an old and discarded method not only practicable but a valuable addition to our means of surgical diagnosis.—*American Surgical Association*, 1889.

V. Sarcoma of Tonsil. By D. W. CHEEVER, M.D. (Boston). A man, æt. 57 years, with nasal catarrh for several years, had had an enlarged tonsil for a year with occasional enlarged glands, increasing to the point of dysphasia but without pain. There were two glands on the left of the neck, each as large as a horse-chestnut, and the left tonsil projected nearly to uvula, distended the soft palate and was as large as a pullet's egg; its appearance was gray, striated or marked like the normal tonsil and not very hard. Under ether, the patient sitting, the glands, one in front of and the other behind the sterno-mastoid, were removed, the incision for the latter being concave upward and marking the boundaries of the digestive triangle. A second incision was made upward at right angles to the middle of the other and through the subjacent tissues, reflecting the submaxillary gland. The lower jaw was then sawed in two in front of the masseter, the mouth remaining unopened and free from blood. The tumor, now being projected into the wound by a finger in the mouth, was readily uncovered and exposed in its capsule. Enucleation not seeming practicable, the diseased tonsil was removed, capsule and all, without hæmorrhage or great difficulty. The facial artery and external jugular vein were the only vessels ligatured. The free slit into the mouth through the pharynx was $1\frac{1}{4}$ inches long. The pharyngeal wound was not sewed up, the cutaneous wound only partially approximated and the wound dressed with boracic gauze. The after-course was good; the patient being discharged on the 29th day. A small glandular tumor was removed from the same side of the neck three months later, both growths being round celled sarcoma.

P. S. Connor, M.D. (Cincinnati), had had two cases and knew of others which had not been reported. (a) The first, a woman, æt. 25 or 26 years, was in so bad a general condition, with the disease so far advanced that no operation was justifiable, and she died in a few days. (b) The second, a man, æt. 40 or 45 years, had a tumor as large as

the fist, which had been much irritated by operations upon it under the impression that it was simple enlargement. It had passed back behind the mucous membrane of the pharynx, pushing toward the median line, and approaching the mid line of the soft palate in front. The tumor was readily reached through a slit in the cheek, and easily shelled out from its capsule. The disease, however, recurred two months later and the man committed suicide.—*American Surgical Association*, 1889.

VI. Dermoid Cyst of the Chest. By R. J. GODLEE (London). A lady, æt. 30 years, had felt a sudden pain some years previously, followed by pleurisy with effusion and empyema, the latter opening into a bronchus. Purulent expectoration continued until, hugging and tenderness in the right lower axilla having appeared, an exploring needle showed the existence of a pus cavity, which was small and presented other peculiarities, which were explained when, at a subsequent operation, the opening was much enlarged, exposing a cavity lined by skin and containing large masses of hair and processes from which hair was growing. One or two hairs had before this appeared in the discharges, and others had been expectorated. The most prominent of the projections were removed and the rest of the surface treated as far as possible with the actual cautery. The external and internal skin surfaces were united by sutures. The opening showed a marked tendency to contract and retain the discharges, but finally it was possible to retain a large vulcanite tube, which the patient was still wearing, being incommoded only by the discharge, which was thin and watery, probably coming from the bronchial tubes as well as the cyst. The failure of healing was due to the rigidity of the ribs and chest wall.—*Lancet*, April 27, 1889.

JAMES E. PILCHER (U. S. Army).

BONES, JOINTS, ORTHOPÆDIC.

I. The Treatment of Fungus Inflammation of the Knee-Joint by Resection. By W. ZOEGE-MANTEUFEL, M.D. (Dorpat). The above is a collection of 55 knee-joint resections from the clinic of

Prof. V. Wahl, of Dorpat. They include the operations performed between 1878 and 1888 inclusive and supplement the inaugural dissertation of Sack on the same subject. The material is drawn from the peasantry and the time consumed in the hospital has been as short as possible. The operation is performed without the Esmarch bandage, as the secondary hæmorrhage is apt to cause inconvenience, and the absence of the bandage gives the operator certain arterial landmarks in his operating field which are wanting by the bloodless method. The curved Textor incision is made, dividing both lateral ligaments and the ligamentum patella. The ends of the bones are exposed and the diseased parts sawed off after division of the crucial ligaments and separation of the soft parts. Wahl prefers sawing to curetting as in the former method diseased foci of bone are less apt to escape observation. Sublimate is used as irrigating fluid. The capsule and patella are removed in all cases, even when not diseased. The ends of the resected bones are united with silk sutures. All drains are short and penetrate to the bone. Iodoform is only powdered externally on the wound. The whole is placed in a Volkmann splint which is removed in seven days to give place to a plaster bandage.

Of the 55 cases, 38 belonged to the male sex. Four only were of the ages of 3, 10, 12 years. The others ranged in ages from 15 to 19 years (17), 20 to 24 years (15), 25 to 30 years (16); over 30 years (3). Most were attacked by the disease before the 20th year. The females were attacked, on the average, at the age of 14 years.

In 16 cases a trauma was found the exciting cause. In 4 cases no apparent cause. Author agrees with Wilmer in attributing a trauma as an exciting cause, as a rule, in the male. Hereditary etiology gave negative results to inquiry. In 5 cases tuberculosis of other organs was demonstrated. In 2 cases there was undoubted synovial disease. In 2 additional cases the synovial disease was primary. As a whole the cases were osseous forms of the disease, with or without fistulæ and coming moderately early for operation. The gonitis had run its course in 5 cases, giving an angular ankylosis, necessitating resection.

Of the remaining cases, 2 were operated upon by Volkmann's method with bad results. In the remaining (48) cases the Textor

method was resorted to. Aside from the fatal cases there were complications in 10; in 3 erysipelas; in 7 cases a more or less complicated suppuration, necessitating amputation in one case. Two cases were attacked with typhoid fever. One case was operated during pregnancy without accident. The duration of the treatment was on the average 65 days. The wound complications and death are found in cases operated on early in the last decade; with improved methods these accidents have been eliminated. Secondary hemorrhage occurred in 2 cases; in 1 from the spongiosa, necessitating iodoform tamponade. In 39 cases primary intention resulted. The author in this includes cases which were accompanied by a very slight discharge of pus from the drains; by a careful disinfection of the drains this also has been eliminated of late years. There were 6 deaths, 11%. A child, æt. 3 years, died of carbolic acid poisoning, 3 of general tuberculosis. These were not cases of operative inoculation tuberculosis. In one case the cause of death is unknown. In the sixth case there was a fat embolism of the pulmonary artery. In addition to those that died we have 2 cases subsequently affected with general tuberculosis. Local return of disease occurred in 6 cases, in from 6 months to 6 years after operation, or immediately after operation. Sixteen cases of those operated may be thus far regarded as definitely cured, and not liable to have return of disease in loco operationis. In 6 additional cases cure continues after 1-1½ years; 16 cases cured at discharge have not been heard from. The average shortening was 2.75 cm. In this the angular resections are not included. In a resection angle 70° the shortening was 11 cm. The aim of all operations has been to remove all possible disease, to shorten the stay in the hospital as much as possible, and to obtain a bony ankylosis with the least shortening.—*Deutsche Zeitsch. f. Chir.*, bd. 29 heft 1.

HENRY KOPLIK (New York).

II. Kocher's Method of Reducing Subcoracoid Dislocation of the Humerus. By CHARLES A. POWERS (New York). The author from a careful study of this method derives the following conclusions: (1) Of the various luxations of the head of the humer-

us the subcoracoid is much the most common. (2) The method to be employed in its reduction is, *par excellence*, that of Kocher, which should be applied in every recent case. (3) This procedure is logical and safe, and may be easily and rapidly carried out. Its careful, accurate and thorough employment will most invariably insure success at the first attempt. (4) It will not succeed in those cases, happily uncommon, in which the capsular ligament is severely torn. (5) The patient should be placed in the dorsal position. (6) It is attended with the least possible pain to the patient, and an anæsthetic is unnecessary. (7) It is practically without danger to the important vessels and nerves. (8) The question as to whether its success depends on the integrity of the anterior or of the posterior part of the capsule must yet be considered *sub judice*. (9) It rarely succeeds in the subglenoid form. (10) It is applicable to the intracoracoid cases, but in these the elbow should be placed behind the posterior axillary line and external rotation should be maintained for two or three minutes. (11) In every case in which much resistance is met with during the early part of the second movement the position of external rotation should be steadily maintained for a short period before bringing the arm forward and across the chest.—*New York Medical Record*, March 30, 1889.

III. Indirect Fractures of the Pelvis. By CHARLES FERE (Paris) and E. V. FERRUCHET (Paris). The authors have made a clinical and experimental study of neuralgia of the obturator nerve of traumatic origin which they present as a contribution to the investigation of indirect fractures of the pelvis. They conclude that: (1) Violence applied to the sacral region of a person in the genubrachial position generally produces a fracture of the horizontal and descending rami of the pelvis with forward projection of the sacrum. (2) The line of fracture of the ileo-pubic ramus always passes over the ileo-pectoral eminence in the vicinity of the acetabulum, only a few millimetres within the coryloid prominence. (3) The line of fracture always affects the thyroid foramen. (4) If the force be slight the projection of the sacrum may be almost *nil* and the horizontal ramus

alone fractured; sometimes this fracture is incomplete and does not implicate the inner face of the bone. (5) The obturator nerve may be injured by the developing callus, resulting in paralysis or neuralgia. (6) In spite of a concussion so severe as to produce multiple fractures of the ilium and sacrum, the necks of both femora were always found intact in the observations of the author.—*Revue de Chirurgie*, July, 1889.

IV. A New Treatment for Transverse Fracture of the Patella. By A. W. MAYO ROBSON, F.R.C.S., (Leeds). At the Clinical Society of London, Mr. Robson remarked that, in view of the unsatisfactory character of the results of ordinary methods of treating fractured patella, and although he had never met with an accident in uniting the fragments, one could not be blind to the great risk to which the operation exposed the patient. To avoid this he had practiced the following method in a case where the bone was broken just below the middle. The skin over and around the joint having been rendered clean and aseptic, the joint was aspirated. He then obtained two long steel pins with glass heads, such as ladies use for fastening the bonnet, and having thoroughly purified them, he drew the skin well up over the upper fragment and introduced the needle transversely through the skin and muscle just above the level of the upper fragment, repeating the operation with the other needle at the upper end of the ligamentum patellæ. Gentle traction on the pins then easily brought the fragments into apposition. The ends of the pins were then clipped off, leaving about half an inch on either side, and the whole covered with antiseptic gauze. After three weeks the dressing was removed and no redness or other signs of irritation were found. There had been no pyrexia and the patient had felt very comfortable all the time. The fragment seeming well united the needles were withdrawn and the patient allowed to go home wearing a plaster-of-Paris splint. Bony union appeared to have been obtained in this and another similar case. The only precaution necessary is to draw up the skin over the upper fragment, in order to avoid undue traction upon it when the fragments are approximated. The advantages of the operation are its simplicity,

the absence of risk and the obtaining of bony union.—*Lancet*, June 1, 1889.

JAMES E. PILCHER (U. S. Army).

GYNÆCOLOGICAL.

I. Oophoro-salpingectomy for Severe Nervous Troubles.
By DR. MARACEO (Naples). At the Sixth Congress of the Italian Society of Surgeons, held in Bologna, the author reported two cases of this operation:

A young woman suffered from the age of 15 with convulsive attacks, especially severe during her menstruation; she tried to commit suicide on three different occasions. She had complete retroflexion of the uterus, with lesion of the appendages. As she attempted a fourth time to commit suicide, I had recourse to the following operation:

I removed the two ovaries, which had undergone cystic degeneration, and the two tubes, which were chronically inflamed; I destroyed the numerous adhesions which existed between the intestinal coils and the anterior surface of the uterus, and having straightened this organ, I fixed it to the abdominal wall. The painful attacks disappeared, and the patient is perfectly well.

I also performed oophoro-salpingectomy on a woman, suffering with very severe nervous trouble. For several years after, she suffered with periodical hematemesis, but without any bad effect on her general health.—*Med. and Surg. Reporter*, June 1, 1889.